

[ABSTRACT OF THE DISCLOSURE

A trunnion assembly is provided for mounting a launching device including a horizontal locating assembly 10 to provide for selected horizontal movement of the the launching device and a vertical locating assembly 80 for varying the inclination of the launching device.

An accumulator tank 24 located below the locating assemblies 10, 80, which receives a liquid such as water. A valve assembly 30 including solenoid valve 32 is in fluid communication with the accumulator 24. Valve assembly 30 may be controlled by a controller 34.

A station assembly 40 includes a curved stand 42 having a vertical portion 43, a curved portion 44 and a horizontal portion 45. Vertical portion 43 includes a lower end 44 which extends into a bearing assembly 50 including a cylindrical enclosure 51 which receives cylindrical bearing 52 made of known composite bearing material, and is connected to stand end portion 44 with removable fastening means 53 such as bolt 54.

Pattern openings 14 are provided in base plate 55 to receive stop assemblies 20 including stop plates 21 having openings 22 to receive fasteners 23. Stops 24 are mounted vertically on stop plates 21. Resilient bumpers 25 made of elastomeric material having a Durometer value of about 60 to 100 A. Scale are mounted on stops 24 with fasteners 26 which extend through respective openings 27 and 28, 28a in stops 24 and part way through bumpers 25. Thus the extent of]

[stancion end portion 44 and through stand 42 and extend through stand horizontal portion 45 and into a barrel assembly including a cylindrical barrel 71 through cylindrical barrel extension 72.

Pattern openings 14 are provided in base plate 55 to receive stop assemblies 20 including stop plates 21 having openings 22 to receive fasteners 23. Stops 24 are mounted vertically on stop plates 21. Resilient bumpers 25 made of elastomeric material having a Durometer value of about 60 to 100 A Scale are mounted on stops 24 with fasteners 26 which extend through respective openings 27 and 28, 28a in stops 24 and part way through bumpers 25. As shown in Figure the fastener 29 may be formed interal with the bumpers, or the opening 28a may be threaded to receive threaded fastener 26. Thus the extent of horizontal rotation can be varied through varied placement of stop assemblies 20 into openings 14.

The inclination stop assembly 80 fits within stand horizontal portion 45 and barrel extension 72 and as shown in Figures 3-6 includes a cylindrical casing 81 extending into horizontal stand portion having elongated opening therein 81a to receive set screws 87. The extent of the elongation of openings 81a allows limited adjustability of the extent of vertical travel of the barrel 71. Located within casing 81 is a sleeve 82 having openings 82a to also receive set scres 87, which fix the location of sleeve 82. A pair cylindrical dogs 83 and 85 each having cutaway portions]

[83b and 85b are located within casing 81 and are movable on shaft 86a extending from base 86, having a head 86b located within barrel extension 72 and includes openings 86c to receive set screws 87 which render the shaft 86a movable with barrel 71 about the horizontal A-A in Figure 1.

Located within respective cutaway portion 83b and 85b are semi-cylindrical floating stops 84 and 84S made of elastomeric resilient material such as polyurethane having a Durometer value of 60 to 100 A Scale. As shown in Figure 5 clearance 84C exists between floating stop 84 and dog 85. Similar clearance exists between floating stop 84 and dog 83.

This Flexible conduit 62 containing wires 63 extends through barrel 71 to a first end 73 to a light assembly 90 to light the liquid carried through flexible conduit 61 and discharged from the second end of the barrel, which houses an orifice assembly 100. The light assembly 90 includes an electrical switch 91, a light bulb 92, and an activating button 93 held in place within barrel end portion 73 by end cap 74. At the other end an orifice assembly 100 includes an orifice 105 which may have a knife edge 106. Optionally diffuser material 107 may be included to lower the Reynolds number of the liquid to create laminar flow.]

ABSTRACT OF THE DISCLOSURE.

This application discloses a trunnion assembly for mounting a launching device including a barrel for launching a liquid or a solid including at least one horizontal locating assembly to allow limited horizontal movement of the launching device; and at least one vertical locating assembly for varying the vertical inclination of the launching device. The structure for varying the extent of horizontal movement of the trunnion assembly includes at least one resilient movable stop assembly; and the structure for varying the extent of vertical movement of the trunnion assembly includes at least one resilient stop assembly.